

STUDY TITLE Social Indicators Study of Alaskan Coastal Viiges

REPORT TITLE: Social Indicators Study of Alaskan Coastal **Villages** IL Research  
Methodology: Design, **Sampling**, Reliability and Validity.

**CONTRACT NUMBER:** 14-12-0001-30300. **Technical Report** No. 153

SPONSORING OCS REGION. Alaska

APPLICABLE **PLANNING** AREAS: **Beaufort Sea**, **Chukchi** sea, BeMg strait! Bering sea, .  
**Norton** Sound, Bristol Bay, North Aleutian **Basin**, **Kodiak**.

**FISCAL** YEARS OF PROJECT FUNDING: **FY 1986- FY 1993 (inclusive)**

COSTS: FY 1986\$399,766 FY 1987\$194,243 FY 1988 **\$263,600** FY1989 \$200,176  
**FY1990** \$ 7 7 , 8 5 4 **FY1991** \$ 4 8 6

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KEY WORDS : **Alakanuk**, **Anaktuvuk**, **Aniak**, **Atka**, **Barrow**, **Bethel**, **Buckland**, **Deering**,  
**Dillingham**, **Gambell**, **Kaktovik**, **Kivalina**, **Kodiak**, **Kotzebue**, **Manokotak**, **Naknek**, **Nome**,  
**Nikolski**, **Nuiqsut**, **Nunapitchuk**, **Old Harbor**, **Point Hope**, **St. Paul**, **Sand Point**, **Scammon**  
**Bay**, **Shishmaref**, **Togiak**, **Toksook Bay**, **Unalakleet**, **Unalaska**, **Wainwright**

BACKGROUND: The social indicator's study was conducted over 4 years among 31 villages  
irs coastal Alaska from Kodiak on the south to **Kaktovik** on the north as part of the Mineral  
Management **Service's** research program aimed at **assessing** potential human and social  
impacts of oil-related development throughout coastal regions in which the **harvests** of  
naturally **occurring** resources of the land and sea are central to commercial activity as well as  
**to** subsistence life styles. This **report** is the second of three required by the original **contract**.  
It explains the research design and the methodologies **employed** to avert threats to validity  
while developing two social indicators systems. As we were **concluding** our third research

*Attach. 1*

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wave in **the** late winter of 1989 among study villages, however, the Exxon **Valdez** foundered on **Bligh** Reef. Subsequently we expanded the study to include ten more villages, eight in the spill-affected area and two beyond the **spill** area. The latter served as controls against which the spill-affected villages could be measured.

**OBJECTIVES:** The **social** indicators project is charged with developing two social indicator systems sensitive to the consequences of OCS activities for persons, their households, **their** village social, economic, and political **organizations**, and the environments in which **they** gain their livelihoods. Each system is to be based on a **separate** methodology and a separate data **set**: one on a questionnaire instrument the other on a protocol. The Minerals Management Semite requested that in the development of these systems, special attention be paid to distinguishing differences among **ANCSA** regions, between Native **and** non-Native **residents**, **between** villages which possessed **well** developed **infrastructures** and superstructures and **those that** did not, **and** between Outer Continental Shelf oil-related activities that may effect village organizations and life with within **villages** and other economic factors which may effect **village organizations** and life **within** villages as weU. It is anticipated that the **social** indicators systems periodically **will** be used to monitor the social conditions of Alaska's rural **communities**.

**DESCRIPTION** This volume focuses **on** the research design and the **research** methodologies employed **in** creating two **social** indicator systems, one based on a forced-choice instrument (the **AOSIS** questionnaire instrument or **AQI**) and one based on an open-ended protocol (the key informant protocol or **KIP**). The goal is to avert threats to internal and external validity to each of the indicator systems so that each **will** be sensitive to change. We describe how we embed panels in a **pretest-posttest sampling** design in order to reduce threats to validity caused by reactively (**testing artifacts**) and specification error (**ecological fallacy**). The design, referred to as 'Solomon Four Group,' **requires** three research waves, each conducted one **year** apart, among the 31 villages in the sample. The manner in which pretest and posttest samples are **drawn** without **replacement**, and the manner in which reinterview panels are selected from **pretest** sample-s are described. AU tests for **AQI** and **KIP** item **reliability** and validity, including tests for construct validity, internal correlations, **stationariness**, and testing artifacts are presented. The data sets comprise 1176 **AQI** interviews and 280 **KIP** interviews. The **AQI** and **KIP** items that passed **all** reliability and validity tests are retained for the **social** indicators systems and are analyzed in **TR154**.

**SIGNIFICANT CONCLUSIONS:** Two **valid social indicator** systems are developed whose inter-instrument reliability is vesy high and whose individual sensitivity to exogenous and **endogenous** factors are non **controvertible**.

**STUDY RESULTS:** The **AQI** and **KIP** indicator systems show **that** whereas each has strengths, each **also** has a **weakness** that **is accommodated** by Use strength of the other. The strength of **the AQI** system is **its** objectivity. **Every** respondent is **asked** the same questions arsd every respondent must **select** among a set of options for each of those questions. The

objectivity is threatened by the trivializing of the topic at which the question is aimed. The **KIP** system is subjective. That is, every respondent is asked to respond on the same set of topics. But the responses **are** not forced, **that** is to say, the choices among answers on each topic are not constrained by a finite set of alternatives. It is incumbent upon the interviewer to classify the responses into variable **classes**. It is the very strength of **the KIP** instrument, responses are open-ended and often rich with examples, that allows us to evaluate whether the questionnaire items have trivialized the topics they address. In short, the **KIP** responses help us to interpret the meaning of AQI responses. **On the other** hand, the objectivity of the AQI responses allow us to adjust for the subjectivity of the **KIP** responses (and the classification of those responses by interviewers). Our analysis of reliability and validity issues **pertaining** to both **data sets** demonstrate marked asrd enduring differences **between** Natives and non-Natives, **between** residents of large, complex villages and residents of small, simple villages, and **between** residents of commercial **fishing villages** and residents of **non-commercial fishing villages** on a wide variety of economic, subsistence economic, **social**, political, and religious items. The **multivariate analyses** of the **data sets** in **TR154** reveal the "items that change under various conditions, and the **probable** causes of those changes.

**STUDY PRODUCTS:** Brelsford, T., A. Fienup-Riordan, J. Jorgensen, S. McNabb, P. Petrivelli, and L. Robbins. 1992. Social Indicators Study of Alaskan Coastal Viages I. **Key Informant Summaries**. Volume 1: Schedule A Regions. Prepared by Human Relations **Area Files** for the U. S. Department of the Interior, Minerals Management Service Alaska **OCS** Region, Anchorage, **Alaska. Technical Report** No. 151. MMS Report Number 92-0031. Contract 14-12-0001-30300.

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